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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,141	04/08/2004	Dun-Nian Yaung	24061.180 (TSMC2003-1127)	8959
42717	7590	11/04/2005	EXAMINER	
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			LUU, THANH X	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/821,141	Applicant(s) YAUNG, DUN-NIAN	
	Examiner Thanh X. Luu	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/2004; 05/2005</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the patterning, the heating, the forming a mask and the etching must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8, 18 and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It appears that Applicant has failed to disclose an embodiment in which the color filter layer is over the protective layer. Figs. 1 and 2 clearly show the protective layer (180) over the color filter layer (170).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 4, 9-12, 14, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekine (U.S. Patent Application Publication 2001/0051405).

Regarding claims 1, 2, 4, 9-12, 14 and 20-22, Sekine discloses (see Fig. 6) a microlens device or array and method of manufacturing, comprising: a substrate having a photosensor or photosensor array (1) located therein; a microlens (3) located over the substrate and including a convex portion aligned over the photosensor; a dielectric film (8) located over and conforming to the microlens; and a protective layer (5) located over the dielectric film. Sekine also discloses (see Fig. 6) a dielectric layer (2 or 7) interposing the microlens and the substrate. Sekine further discloses (see Fig. 6) the dielectric film (8) filling a plurality of gaps (at 12b) and (see paragraph [0119] and [0122]) the dielectric film and the microlens having different refractive indices.

6. Claims 1-3, 7, 9-13, 17 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Izumi et al. (U.S. Patent Application Publication 2004/0033640).

Regarding claims 1-3, 7, 9-13, 17 and 20-22, Izumi et al. disclose (see Fig. 2) a microlens device or array and method of manufacturing, comprising: a substrate (6) having a photosensor or photosensor array (7) located therein; a microlens (11) located over the substrate and including a convex portion aligned over the photosensor; a dielectric film (12) located over and conforming to the microlens; and a protective layer (5) located over the dielectric film. Izumi et al. also disclose (see Fig. 2) a dielectric layer (10) interposing the microlens and the substrate; the dielectric film comprises a first composition that is similar to the second composition of the microlens. Izumi et al. further disclose (see Fig. 2) the dielectric film filling a plurality of gaps (at 12b).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8, 18 and 27, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi et al. in view of Abramovich (U.S. Patent 6,221,687).

Regarding claims 8, 18 and 27, Izumi et al. disclose the claimed invention as set forth above. Izumi et al. do not specifically disclose a color filter as claimed.

Abramovich teaches (see Fig. 4) providing a color filter layer (255) above the microlens for color detection. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a color filter array as claimed in the apparatus and method of Izumi et al. in view of Abramovich to obtain color detection and improve detection.

9. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Izumi et al. or Sekine.

Regarding claims 6 and 16, Izumi et al. and Sekine disclose the claimed invention as set forth above. Izumi et al. and Sekine do not specifically disclose the microlens comprises a polymer material. However, choosing the type of material for the microlens requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide use polymer as

claimed in the apparatus of Izumi et al. or Sekine as desired to obtain a more resilient lens.

10. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine.

Regarding claims 5 and 15, Sekine discloses the claimed invention as set forth above. Sekine does not specifically disclose the dielectric film as an antireflective film as claimed. However, Sekine further teaches (see paragraph [0011]) providing an antireflection film over microlenses to reduce reflection loss. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide use the dielectric film as an antireflective film as claimed in the apparatus Sekine to reduce reflection loss and improve detection.

11. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Izumi et al. or Sekine in view of Applicant's Admitted Prior Art, hereinafter, AAPA.

Regarding claims 23-26, Izumi et al. and Sekine disclose the claimed invention as set forth above. Izumi et al. and Sekine do not specifically disclose manner in which the microlens is manufactured. AAPA (see paragraph [0003] of specification) teaches masking, etching and heating layers to form a microlens as claimed. AAPA further recognizes that such steps are conventional. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use such steps in the method of Izumi et al. or Sekine as desired to readily and cost-effectively manufacture the device.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu  
Primary Examiner  
Art Unit 2878

11/2005